

Fig. 1A

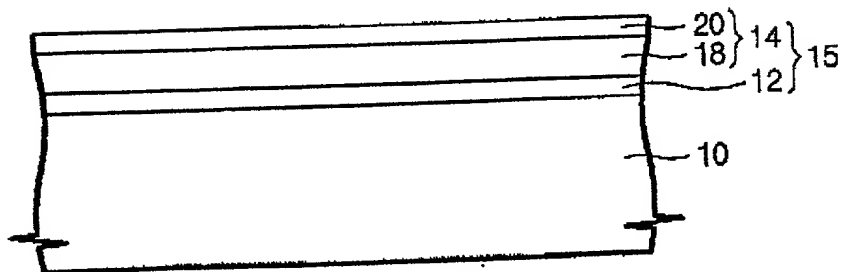


Fig. 1B

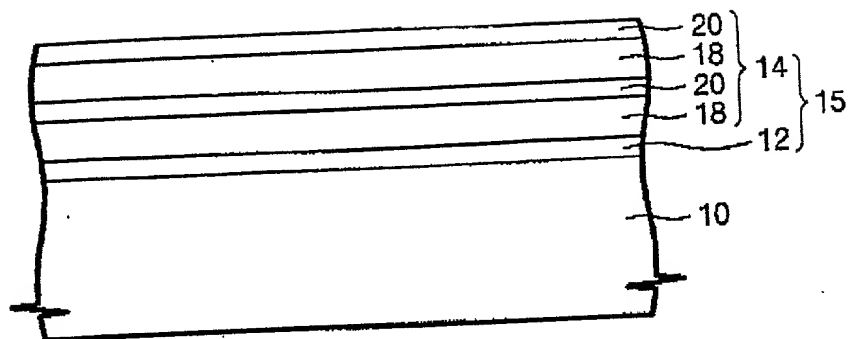


Fig. 1C

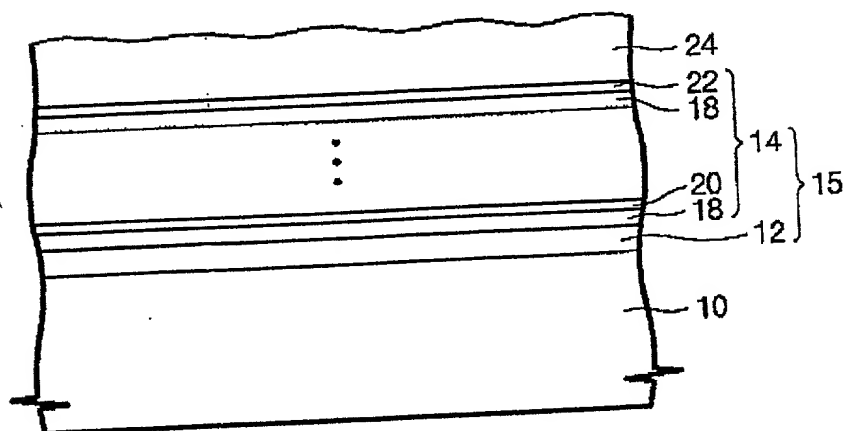
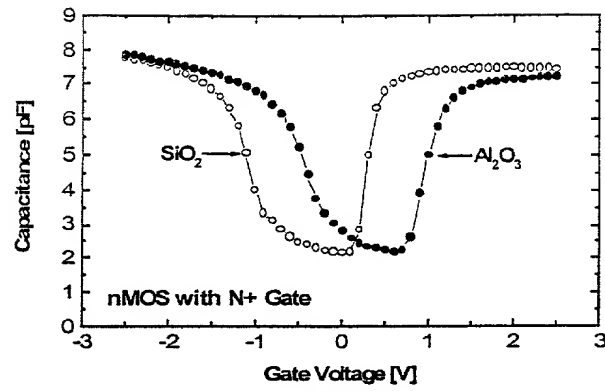
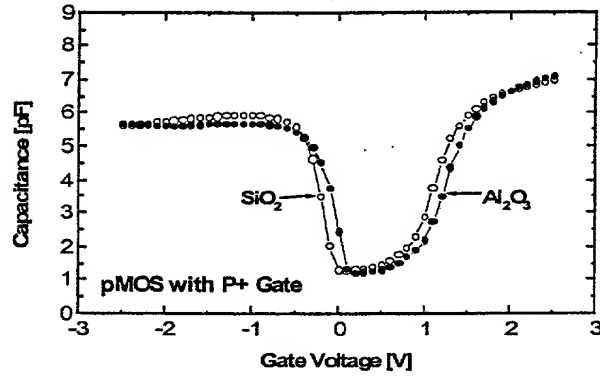


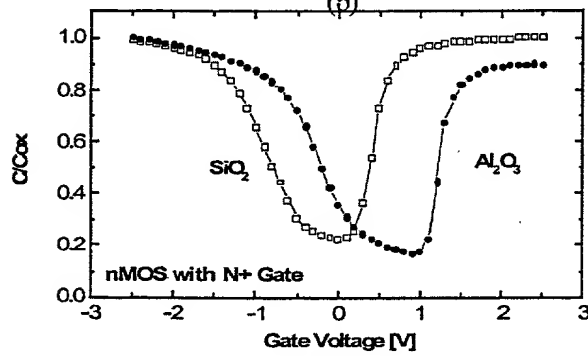
Fig. 2



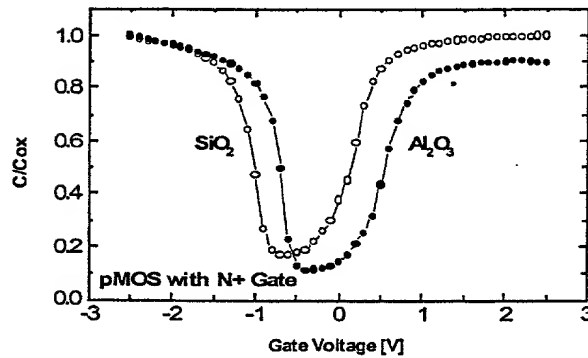
(a)



(b)



(c)

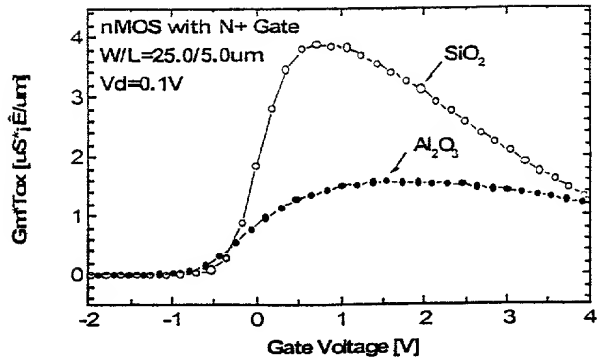


(d)

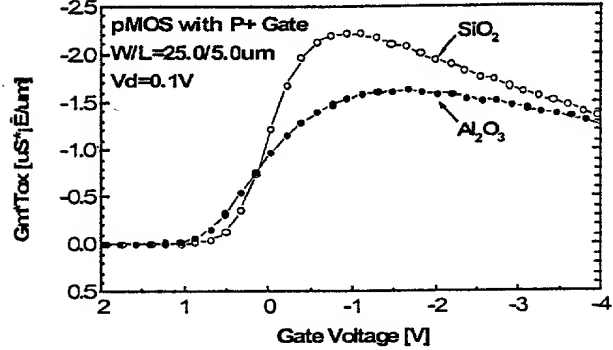
Al_2O_3 MOS Capacitor C-V Curves

- (a) n+Poly-Si/ Al_2O_3 or SiO_2 / p-Si (b) p+Poly-Si/
 Al_2O_3 or SiO_2 / n-Si (c) n+Poly-Si/ Al_2O_3 or
 SiO_2 / p-Si (d) n+Poly-Si/ Al_2O_3 or SiO_2 / n-Si

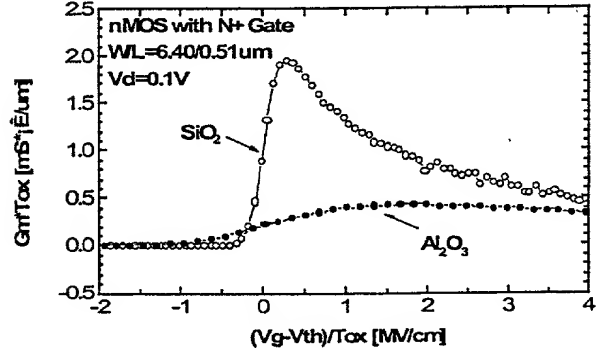
FIG. 3



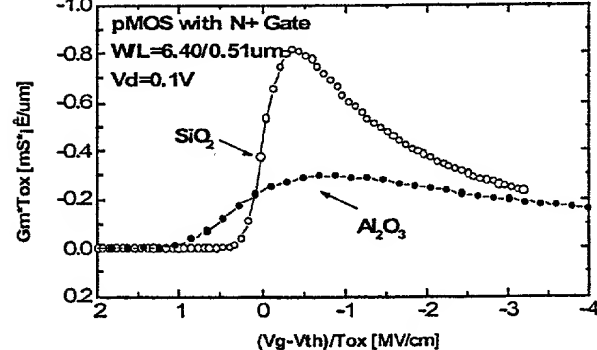
(a)



(b)



(c)

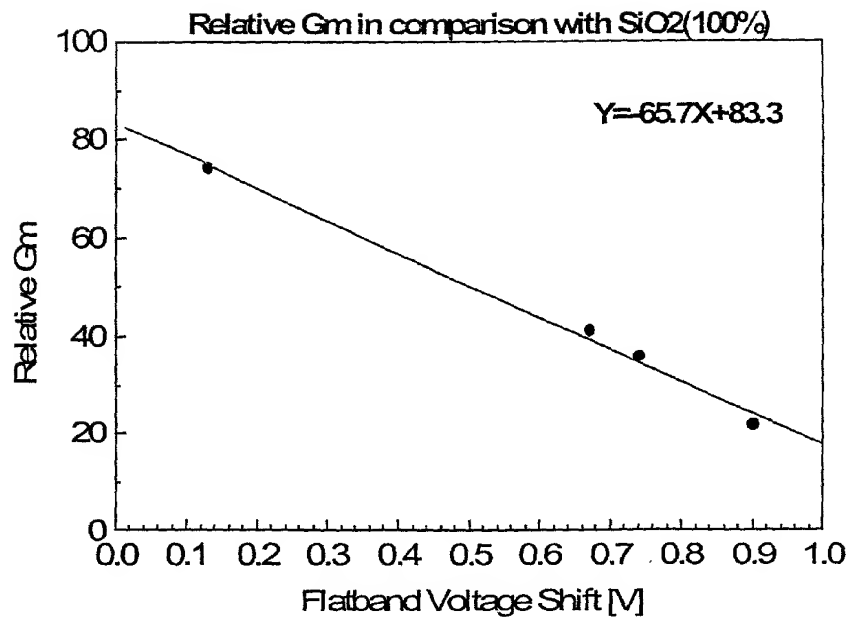


(d)

Gm(Normalized Transconductance) vs. Vg

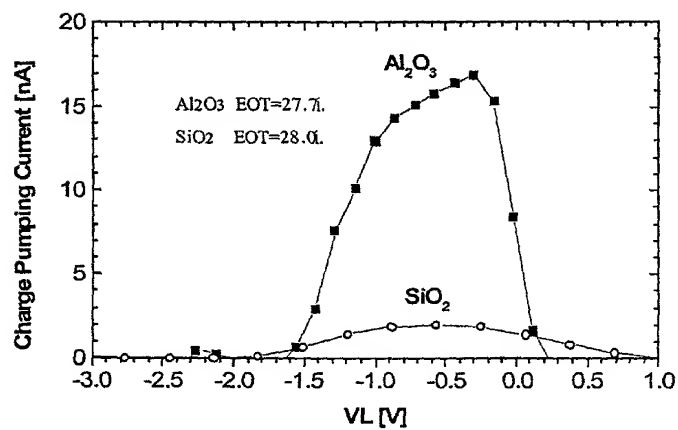
- (a) N+Gate nMOS (b) P+Gate pMOS
- (c) In-situ Doped N+Gate nMOS
- (d) In-situ Doped N+Gate pMOS

FIG. 4



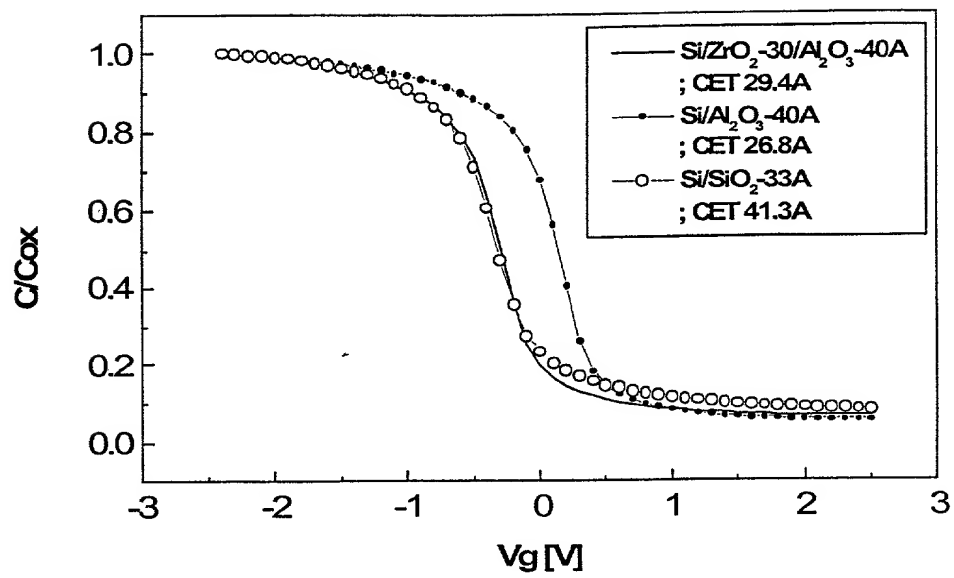
Flatband Voltage Shift vs. Relative Gm of Al₂O₃ to SiO₂

FIG. 5



Gate Base Level VL vs. Charge Pumping Current I_{cp}

FIG. 6



C-V Curve of $\text{ZrO}_2/\text{Al}_2\text{O}_3$ Stack layer

FIG. 7